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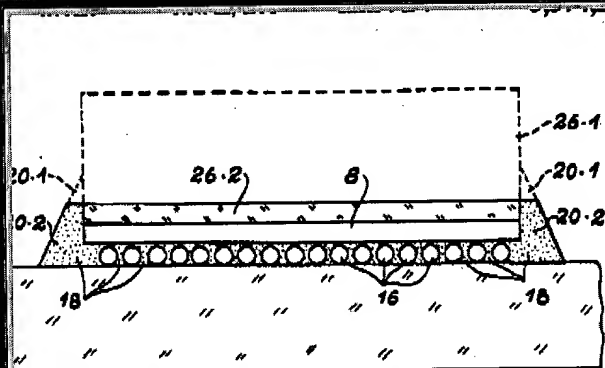


FIG. 8

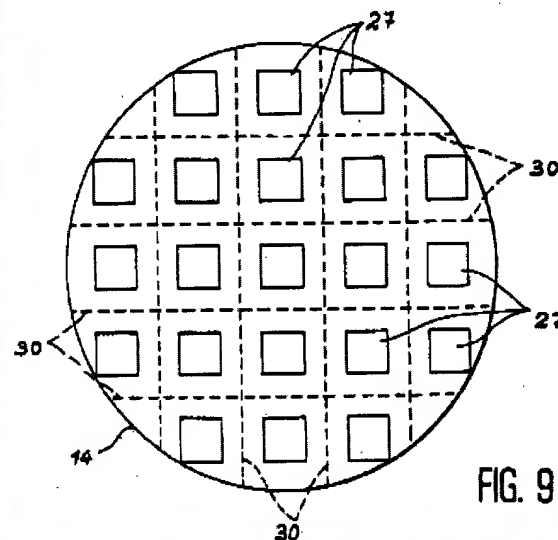


FIG. 9

Bingo

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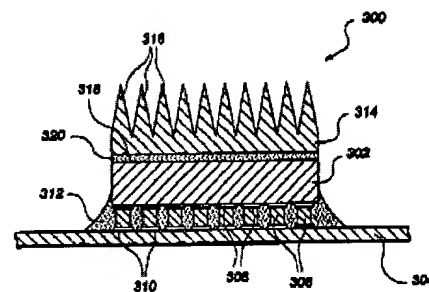
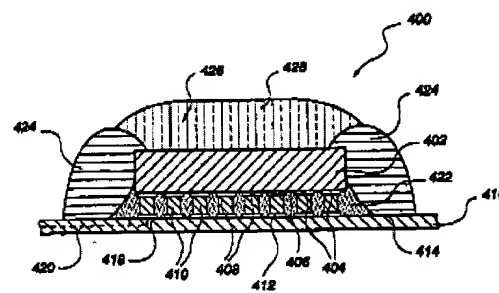
Fig. 3
PRIOR ART

Fig. 4

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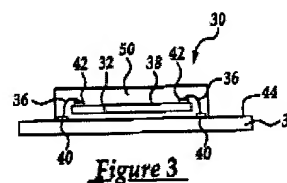


Figure 3

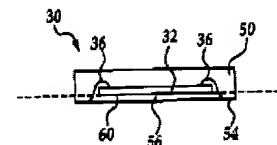


Figure 4

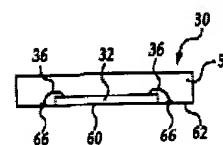


Figure 5

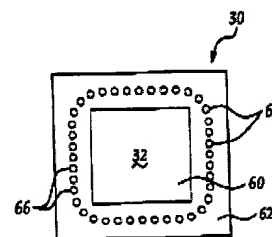


Figure 6

Bingo

apparatus for removing encapsulant from a device, such as to facilitate failure testing of the device.

Brief Summary Text - BSTX (8):

Unfortunately, removal of the encapsulant material from the integrated circuit is not a simple process. The thermosetting encapsulants typically used will not simply reflow upon the application of heat thereby exposing the underlying leadframe, bond wires and circuit die. It is typically important for subsequent testing that the die and bonding system not be destroyed, and that electrical connections can be established to facilitate electrical performance testing.

Brief Summary Text - BSTX (9):

One conventional approach to removing the encapsulant or "decapsulating"

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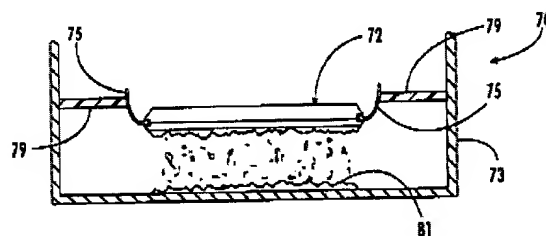


FIG. 5.

assembled onto the mold, and, using conventional transfer molding equipment and techniques, a plastic composition is transferred into the mold and flows around the chip, bondwires, and lead frame as it fills the mold cavity.

(4) As soon as the plastic sets, the mold top and bottom can be removed and the molded plastic package 31 (FIG. 4) can be removed. The plastic package comprises the chip 20, attached by bondwires 24 and lead frame 23, all encased within plastic molded body 32. The portion of the chip back side 27 previously positioned on the vacuum mold pedestal remains uncovered by plastic and is exposed and facing outside the package within recess 33.

(5) In FIG. 5, a finished molded plastic package is illustrated, including a heat sink 34 fitted into recess 33 in direct thermal contact with the

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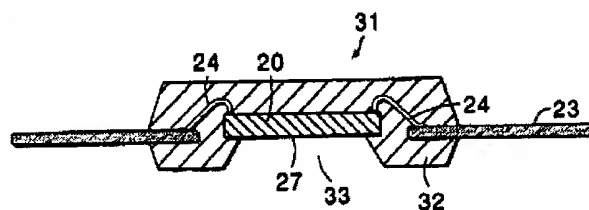


FIG. 4

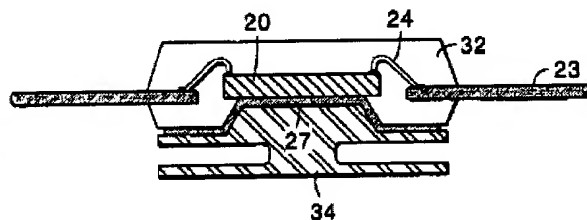


FIG. 5

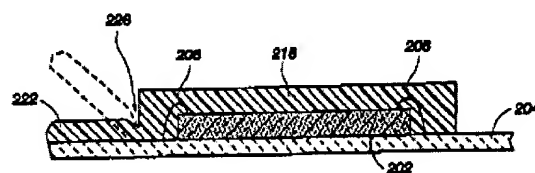
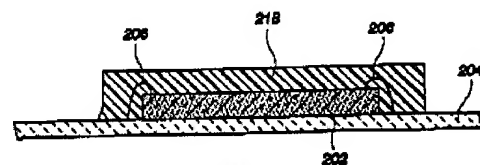
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Fig. 15
(PRIOR ART)Fig. 16
(PRIOR ART)

dual-in-line package are several millimeters thick. Other small outline packages are a millimeter in thickness.

Brief Summary Text - BSTX (3):

There are a number of reasons for removing the plastic encapsulant from finished Integrated circuits. One reason is to monitor the manufacturing process. In most mass manufacturing processes, samples of finished product are often taken and analyzed to check whether or not the finished product is made to the manufacturing specifications. When one or more devices fail, it is desirable to analyze those failed devices to detect process flaws so that the flaws can be corrected. Some devices are also reverse engineered in order to discover how the device is constructed.

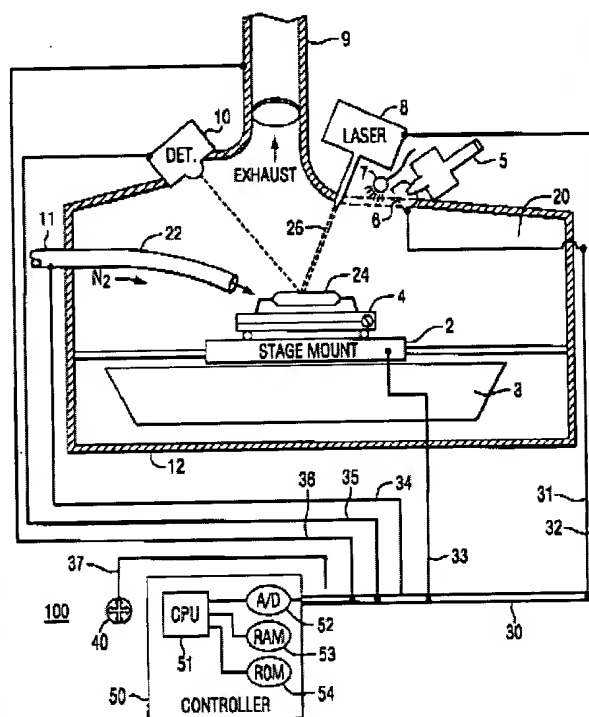


FIG. 1

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